

# A COMPARATIVE ANALYSIS OF THE IMPACT OF MERCHANDISE EXPORTS VERSUS SERVICE EXPORTS ON ECONOMIC GROWTH IN THE SACU REGION

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## ABSTRACT

International trade is one of the critical drivers of the global economy. Many countries have successfully facilitated rapid growth via the export-led growth nexus. Diversification and specialisation are essential components of exports. This paper focuses on diversification and the role of merchandise exports versus service exports on economic growth in a developing region, namely the Southern African Customs Union (SACU). This region has experienced low growth over the last decade and requires different strategies to re-ignite growth. A quantitative methodology was selected to assess the difference in the impact of merchandise exports versus service exports, using Fisher-Johansen cointegration panel time series data, FMOLS and DOLS regressions, and Granger causality analysis from 1990 to 2019. Economic growth was used as the dependent variable with merchandise exports, service exports, gross fixed capital formation, and the labour force as independent variables in three different models. The results indicated a cointegrating long-run relationship between all the variables and that merchandise exports had the highest impact on economic growth. Granger causality tests also found that exports cause changes in economic growth and that service exports cause changes in merchandise exports. The study found support for export-led growth as a means by which to re-ignite economic growth in the region; an export-focused development strategy is required in order to facilitate export diversification with a focus on improving value-added merchandise exports and the development of service exports via incentives.

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## KEY WORDS

Economic growth, merchandise exports, service exports, SACU region.

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## Introduction

The export-led growth hypothesis has been proven globally in many countries across all continents (Malović and Zdravković, 2017). International trade and exports are significant engines of growth, and have been successfully implemented

for rapid and sustained growth (Zeng, 2010). However, there is still an ongoing debate regarding the concepts of diversification and specialisation in terms of international trade. Should the theory and principles of comparative advantage as

initially developed by Ricardo be followed, or should countries and regions attempt to diversify their export portfolios as far as possible? African countries are known for the export of most commodities and raw resources with limited value-adding. The selected African region (SACU) is analysed to determine the level of diversification and impact on economic growth in the region. Although many research papers have focused on these concepts, limited research has been published in the context of Africa and Southern Africa, which has experienced a decade of low growth. The implications and importance of this study are that specific gaps in the current export structure could be identified, and improvement plans could be formulated. Therefore, the research question is: What are the differentiated impacts of merchandise exports and service exports on economic growth in the SACU region?

The diversification of exports has many benefits, and some of these benefits are listed in two studies on diversification. McIntyre et al., (2018) analysed economic diversification through exports for 34 small states from 1990 to 2015. The study found that countries with more diversified exports experienced lower output volatility and higher average growth than those with less diversification. To facilitate a more diverse economy and exports, structural changes using an integrated development strategy are needed. Sannasse et al., (2014) also analysed the role and impact of diversification of exports, identifying various factors: a fair degree of liberalisation; high levels of elasticity of demand; lack of incentives and finance; high levels of bureaucracy; barriers to market entry; poor infrastructure; lack of skilled labour; weak institutions and lack of good governance; high levels of corruption; and macroeconomic stability.

The Southern African Customs Union (SACU) consists of five countries, namely Botswana, Lesotho, Namibia, South Africa and Eswatini, previously known as Swaziland, and was established in 1910, making it the world's oldest customs union. The agreement between the member countries resulted in a single tariff structure and no customs duties between them, and a standard external tariff that applies to non-members (SACU, 2020). The top export markets for SACU countries are the European Union countries, China, the USA and India. This paper compares the export of physical goods and products with the export of services within the South African Customs Union (SACU) development region to determine the impact of exports in the two categories on economic growth in the region.

## 1. Literature review

This section contains two sub-sections, namely the theoretical foundation and empirical studies focusing on the export-led economic growth nexus, export diversification, and the analysis of merchandise versus service exports. The theoretical linkages between exports and economic growth have been debated and included in theories for two centuries now, dating back to the classical school of economics of Adam Smith and Ricardo (Cho and Moon, 2000). The benefits of trade liberalisation, diversification and specialisation of exports have also been proven over several decades (Agosin et al., 2012). Furthermore, in the last few decades, the hypothesis that more open economies grow faster than closed economies has also been proven (Yanikkaya, 2003). Trade and export growth has been used successfully for rapid growth in many countries since the 1960s, including the Asian Tigers (Paldam, 2003). It is generally accepted that the growth and expansion of exports contrib-

utes significantly to economic growth in both developed and developing countries (Meyer, 2020). Some of the main benefits include improved capacity utilisation; improved opportunities for the creation of economies of scale; increased technological progress; job creation; increased labour productivity; improved allocation of scarce resources throughout the economy; assistance in attracting foreign investment; and lastly, improved use of production factors and productivity, also leading to economic development (UNCTAD, 2001). Also of importance is the dilemma of diversification versus specialisation in terms of exports. Classical trade theory promotes specialisation in the export of goods where such a country may have a comparative advantage. Still, such specialisation in a few products could eventually increase vulnerability to global shocks in the trade environment (Lectard and Rougier, 2018). Developing countries are, in most cases, vulnerable due to a focus mainly on primary sector goods such as commodities. Another viewpoint, which is relevant in terms of preventing the risk of vulnerability, is the export diversification theory. This study aims to analyse the abovementioned debates and assess the level of diversification with a focus on the export of merchandise or physical goods and products versus collaboration with the export of services or non-physical products.

In this section, the empirical results of studies are analysed, which relates to the export-led growth nexus, the export diversification and growth nexus, and the impact of merchandise versus service exports on growth. The export-led economic growth nexus has been a focus within the international trade research arena. Kalaitzi and Chamberlain (2020) assessed the validity of the export-led growth (ELG) nexus in the United Arab Emirates (UAE) from 1975 to 2012. The study used a Johansen

cointegration methodology with a dynamic ordinary least squares (DOLS) regression to test the long-run relationship between exports and economic growth, and found a long-run relationship. A multivariate Granger causality test was also applied to examine the direction of the short-run causality, finding evidence to support the validity of the export-growth nexus in the short run. Begum and Shamsuddin (1998) also analysed the effect of exports on the economic growth of Bangladesh from 1961 to 1992. The results of the analysis confirmed that export growth has led to significant increases in economic growth through an improvement of total factor productivity in the economy. This impact and contribution of exports to economic growth were visible during years of trade liberalisation, structural reforms, and political stability. However, the direction of causality is not always clear between exports and economic output, although the relationship is not disputed. Tekin (2012) assessed the causality among variables such as GDP, exports and FDI in developing countries between 1970 and 2009. The results show various causalities for different countries: a unidirectional causality where exports cause GDP in Haiti, Rwanda and Sierra Leone, while GDP causes exports in Angola, Chad and Zambia.

Ee (2016) also assessed the export-led growth nexus for several Sub-Saharan African (SSA) countries from 1985 to 2014 using modern panel data methodology including fully modified regression (FMOLS) and dynamic ordinary least squares (DOLS). The results of the study indicate the existence of a long-run relationship between variables, including exports and growth, investment, and government expenditure. These results confirm and validate the usefulness of export growth as a strategy in SSA countries. Lastly, Ajmi et al., (2015) assessed the link between

exports and economic growth in South Africa from 1911 to 2011. Non-linear Granger causality tests reveal unidirectional causality from GDP to exports.

The next section of the empirical analysis focuses on diversification or specialisation and the relationship to economic output. Munirand Javed (2018) analysed the impact of export diversification and specialisation on economic growth for four South Asian countries, namely Bangladesh, India, Pakistan and Sri Lanka. Panel data from 1990 to 2013 was used, and the results indicate that an increase in export diversification could initially lead to increased economic growth. Still, after the threshold level has been reached later, export specialisation becomes essential and drives economic growth. The introduction of new export sectors after the threshold level could also still lead to an increase in economic growth. Policy issues of importance include ongoing incentives for innovation and training, incentives for increased export diversification, and support for the development of the manufacturing sector via technical assistance. Brenton et al. (2009) assessed the avenues of trade and export diversification, including expanding the geographic localities while keeping products constant, and the study found three of these avenues, which include improving the value and quality of existing products; the expansion of service exports; and exports of new products. Lugeiyamu (2016) analysed the effects of export diversification for economic growth in Africa from 1998 to 2009. The study found that countries with more diversified exports generally experienced faster economic growth. Therefore, trade policy should focus on the importance of export diversification to mitigate the negative impacts of global economic shocks affecting specific sectors and especially commodities.

Ogundipe and Amaghionyeodiwe (2013) assessed export diversification successes for economic growth in the ECOWAS African region. The region mostly exports primary products with limited value added, which leaves these countries dependent on commodity price fluctuations and demand with volatile foreign earnings. The study used panel econometric analyses for 15 of these countries from 1975 to 2009. The results indicated that the diversification of exports and value-added manufacturing activities positively influenced income growth, and that diversification rather than specialisation caused increased economic growth. Important recommendations for developing regions are the need to develop domestic processing capability and export growth originating from domestic sufficiency. Forgha et al., (2014) assessed the relationship between the diversification of exports and economic growth in Cameroon from 1980 to 2012. The results of the study indicated that export diversification had a positive impact on economic growth. Therefore, it is essential to expand the export base by means of various strategies, including developing new production techniques, intensified research on new products for export, and incentives and subsidies to promote exports.

Naudé and Rossouw (2011) also assessed the relationship between export diversity and economic performance, focusing on the BRICS countries, excluding Russia, from 1962 to 2000. The results from the study indicated that increasing diversification of exports could cause changes in GDP per capita in countries such as Brazil, China and South Africa. In terms of India, it was found that GDP per capita caused changes in export diversification. An interesting result from the study was that South Africa was found to have different characteristics compared to the other countries in terms of export diversification,

where it has a decidedly positive impact on economic development. In contrast, in Brazil, China and India, it is export specialisation that is preferred instead. Carrasco and Tovar-García (2020) investigated the trade growth nexus in 19 developing countries, analysing the impact on the growth of export composition, export diversification and import composition. The study reported interesting results, including the fact that export composition and export diversification were not found to significantly impact economic growth. Aditya and Acharyya (2013) assessed the export-growth relationship, focusing on the diversification and the composition of exports of countries for 65 countries from 1965 to 2005 using panel data estimation. The main results indicate that diversification and the composition of exports are important determinants of economic growth. At a specific threshold level of diversification, a greater degree of export specialisation could increase growth rates. In contrast, for values below the determined critical level, high diversification levels are important for economic growth. Increasing growth in services and high-tech exports also contributes to output growth. Higher levels of high-tech exports also allow for increased manufacturing exports.

This next section of the empirical analysis focuses on the roles of merchandise and service exports in terms of economic growth. Fanhua (2008) assessed the impact of the global merchandise and service trades on economic growth. The results from the study are that the global merchandise trade promotes economic growth through increases in assets and improved technology. In contrast, the service trade has an impact on human capital development and marketisation. Daniels (2000) analysed the progression of trade in services, finding the contribution of service exports to be growing relatively slowly.

The indirect contribution of services to overall national export activity seems more important than the direct impact. Goods production and the distribution of merchandise exports are increasingly dependent on service knowledge and skills. Export competitiveness is seen as a function of the expertise and intellectual knowledge incorporated in the products. Gnanon (2020) assessed the impact of manufacturing exports on service export diversification in 138 countries from 1995 to 2014. The findings indicate that higher manufacturing exports are linked to an increase in service exports, with the positive impact more significant for developing countries than advanced countries. The factors that allow for a robust positive relationship are increased trade liberalisation, higher financial development levels, improving education levels, higher FDI inflows, and improved governance quality.

Contractor and Mudambi (2008) studied the importance of the service sector and exports in the sector and the impact on economic growth. Globally, the service sector is growing rapidly, and the reasons for this need to be understood by governments. This study analysed exports in the service and merchandise sectors from 1989 to 2003 for 25 developing countries. The analysis sought to determine whether human capacity is different for service versus merchandise exports, and found that human capital did significantly affect the exports of goods and services. Still, it was not significantly more important for service exports than for merchandise exports. Eichengreen and Gupta (2013) analysed the determinants of service and merchandise exports in developing countries. The study found that the real exchange rate is an essential factor for export growth, especially for service exports compared to merchandise exports. A further recommendation is that developing countries require

stable and robust currencies as they move from exports of raw commodities to more modern value-added and service exports.

Cheong Tang and Wong (2011) analysed the relationship between FDI and international trade in Cambodia, a developing country. The findings indicate that FDI is an essential igniting agent for both merchandise and service exports and could even allow for forward and backward linkages between the two sectors. It was also found that merchandise exports are more sensitive and vulnerable to FDI inflows than service exports. Nyen Wong and Khoon Goh (2013) analysed the causal relationship between FDI and trade components of merchandise and service exports for Singapore. The findings indicate that FDI opens channels for increased merchandise exports. Simultaneously, no evidence was found of a relationship between FDI and the service trade, because service exports have the main goal of creating a market presence in the consuming country. Chadee and Mattsson (1998) focused on merchandise exports from manufacturing and service exports in New Zealand. The results reveal that a significant difference exists between service and merchandise sector exporters. The key differences are that service export firms are more flexible, able to adapt their products as demand changes; they use more direct export channels and are generally more proactive in developing export strategies. Hoekman and Shepherd (2016) assessed the service sector and exports in the East African Community (EAC) countries. They found that the service sector directly impacts the productivity of firms and their export performance in the agricultural and manufacturing sectors or merchandise exports. A recommendation from the research is that, if EAC countries can lower the average level of service trade restrictions, exports from EAC countries could increase by between 13 and 20%.

Ibrahim (2012) assessed the importance of merchandise exports for Egypt using time series data from 1990 to 2008. The results from the study confirm that a positive and significant relationship exists between the value of total merchandise exports and the trade partners of Egypt in terms of income and exchange rates. In contrast, export prices have a negative relationship. Kalaitzi and Cleeve (2018) tested the export-led growth nexus in the United Arab Emirates (UAE) over the period of 1981 to 2012, focusing on the causality between primary exports, manufactured exports and economic growth. The long-run analysis results indicate that manufactured exports contribute more to economic growth than primary or commodity exports and that a bi-directional causality exists between manufactured exports and economic growth in the short run. Gouvea and Vora (2015) assessed the export performance of 44 developing countries from 1988 to 2012. They classified countries by the dominance of their exports in four groups, namely fuel products, manufactured products, food and agricultural products, and raw ores and minerals. The main results confirmed that the manufacturing export-focused portfolios have superior performance than export portfolios focused on non-manufactured products. This research validates the theory that manufacturing goods and exports is the best strategy for developing a country's exports.

Mitra et al., (2013) focus on analysing service exports in India. They showcased and established the extent of success in service exports globally, especially in IT services. The importance of growth in the service sector and export growth in the sector is due to the following aspects: overall economic development, communications infrastructure, access to foreign technology, and spill-overs between merchandise and service exports. Gabri-



ele (2006) assessed the nexus between economic growth and service exports in developing and emerging countries. The analysis indicates that service exports have a positive impact on GDP growth in the longrun in such countries. However, it was found that service exports have less of an impact in developing countries than developed countries, because service exports are controlled by foreigners who are less integrated in the economy. Also, the study found that exports have had a declining impact on growth since the 1990s, which is especially true of the merchandise component of exports rather than the service component. However, merchandise exports are still seen as a stronger engine of growth than service sector exports.

Dash and Parida (2012) analysed India's service sector and its contribution to the economy. The service sector contributes more than 60% to GDP and even more than 40% of exports, while the sector also contributes to employment. The study is quantitative and used autoregressive distributed lag and vector error correction model (VECM) methodology and quarterly data from 1996 to 2011. The results of the study indicate a long-run relationship amongst the variables included in the study, such as economic growth, exports of services, imports, and the real effective exchange rate. It was determined that service exports are a driver of economic growth. Rakshit (2007) analysed the role of service sector exports in the Indian economy. India has prospered by using services to grow the economy. The sector's growth has been driven by government consumption, growth in the exporting of services, consumption of services by households, and increased total factor productivity leading to service exports. The study also found that, unfortunately, labour absorption in services has been relatively small.

Kaliappan et al., (2017) studied the service trade and exports in selected Asian countries (namely China, Hong Kong, South Korea, India, Iran, Indonesia, Malaysia, Philippines, Singapore, Thailand, Kuwait, Saudi Arabia and Turkey). The study found that the service trade represents 20.2% (2010) of total world trade; however, trends show that for developing countries, the share of services in total trade has increased from 20% in 1990 to 32% (2010). Moreover, the share of service exports to total exports also increased, from 18% in 1990 to 30% in 2010. These results and changes in the structure of the economies of developing countries indicate the potential for the sector to grow in these economies and provide income. Annual data from 1985 to 2012 was in a panel analysed using DOLS. The panel analysis results indicate that service exports have a significant and positive impact on economic growth and imply that developing countries should have a diversified export policy to include improving the performance of the service sector and service exports to support accelerated growth.

In summary, based on the empirical analysis, the export-led growth nexus was validated, and trade liberalisation and stable governance were requirements for maximum success. The direction of causality between exports and economic growth could not be proven without any doubt, but it seems the most common results indicate bidirectional causality. Regarding export diversification versus specialisation, it seems that diversification will initially lead to rapid growth, but as the economy matures, specialisation could drive growth. Export diversification causes economic growth, but not vice versa. Regarding the debate on merchandise exports and service exports, it seems that merchandise exports are more critical to growth based on evidence from the literature. However, service exports support merchandise exports, but more merchan-

dise exports cause increases in service exports. Service exports are more flexible and can adapt faster than merchandise exports to changing markets and demand. It was also confirmed that merchandise exports and GDP have bidirectional causality, and service exports have less impact and cause GDP growth. Service exports do not lead to high levels of employment, while merchandise exports do create large numbers of jobs on the labour market.

## 2. Methodology

The research methodology is based on quantitative methods, using panel time series econometric models. The study assesses the relationship between different variables using data from 1990 to 2019 from the World Bank (2020) dataset. The methodology is based on similar research by Kollie (2020) on the export-led growth hypothesis, where the study analysed selected ECOWAS countries in a panel analy-

sis. The research was based on the neo-classical growth model, which Solow and Swan developed in 1956 (Cordina, 2004). The theory states that economic growth occurs based on three main factors, namely labour, capital investment and technology. The neoclassical growth model is listed as follows, where *Y* is the output or GDP in the economy; *L* is the total labour force; *K* is capital invested in the economy; and *A* is technological advancements:

$$Y = f(L, K, A) \dots \dots \dots (1)$$

In the formulation of the model for this study, considering the assessment and comparison of merchandise and service exports, two variables were added to the equation, namely merchandise and service exports. All variables were transformed to the natural logarithm value to simplify the analysis and results. Three different equations are analysed as listed:

$$\text{Model 1: } LGDP_{it} = \alpha_0 + \beta_1 LMerchexp_{it} + \beta_2 LGFCF_{it} + \beta_3 LLabf_{it} + \epsilon_{it} \dots \dots \dots (2)$$

$$\text{Model 1: } \alpha_0 + \beta_1 LServexp_{it} + \beta_2 LGFCF_{it} + \beta_3 LLabf_{it} + \epsilon_{it} \dots \dots \dots (3)$$

$$\text{Model 1: } \alpha_0 + \beta_1 LExports_{it} (LMerchexp + LServexp) + \beta_2 LGFCF_{it} + \beta_3 LLabf_{it} + \epsilon_{it} (4)$$

Whereas *L* indicates the logarithm value of a variable; *i* represents individual countries; *t* represents the time period of the study;  $\alpha_0$  is the intercept;  $(\beta_1, \dots, \beta_3)$  are the independent variable parameters to be es-

timated; *LGDP* is the dependent variable; while *LMerchexp*, *LServexp*, *LGFCF* and *LLabf* are independent variables. Table 1 provides a detailed explanation of all the variables included in the study.

**Table 1. Explanation of variables**

Variable	Definition	Acronym used in econometric models
GDP (constant 2010 US\$)	GDP is the aggregate of the total gross value added by all participants in the economy.	GDP and in logarithm format LGDP
Merchandise exports (current US\$)	Merchandise exports refer to the total value of all physical goods exported to the rest of the world.	Merchexp and in logarithm format LMerchexp
Service exports (BoP, current US\$)	Service exports refer to the total value of intangible or service commodities exported to the rest of the world.	Servexp and in logarithm format LServexp
Gross fixed capital formation (GFCF) (constant 2010 US\$)	GFCF includes all domestic investments in construction to increase production capacity, including factories, offices and commercial buildings and facilities; machinery and equipment investment; and construction of hard infrastructure and soft infrastructure such as educational facilities and hospitals.	GFCF and in logarithm format LGFCF
Labour force	The total labour force includes all residents of a country aged 15 years and older who are available for labour.	Labf and in logarithm format LLabf

Source: World Bank, 2020.



The study utilised a panel econometric methodology to analyse possible associations between a selection of applicable variables. The SACU region was selected as the specific region of focus as these countries form a homogeneous geographical region with large percentages of bilateral trade. In achieving the objectives of the study, several econometric models were used in the assessment of interactions between variables, including the following: (1) stationarity tests via unit root tests; (2) causality tests; (3) tests for evidence of long-run relationships using methods such as ARDL or Fisher-Johansen tests, resulting in an estimation of regressions using FMOLS and DOLS equations; (4) stability diagnostic tests; and (5) robustness estimations. The panel dataset was created for the five SACU countries, including a total of 100 observations. Therefore, the primary objective of the research was to analyse the impact of exports, both merchandise and service exports, capital formation, and the labour force on GDP. The stationarity levels (unit root tests) were completed using the following standard tests: the Im, Pesaran and Shin W-stat test; the ADF – Fisher Chi-square test; and the PP – Fisher Chi-square test. The model selection process was based on the level of stationarity.

### 3. Results and discussion

This section starts with a descriptive summary of the raw data from the panel dataset per country. The SACU region consists of five countries, including Botswana, Lesotho, Namibia, South Africa and Eswatini (previously known as Swaziland). Table 2 is a summary of the raw data per country from 2009 to 2019. Firstly, GDP data is analysed per country. South Africa is the dominant economic force, contributing approximately 91% of the region's GDP in 2019, followed by Botswana and Namibia. Lesotho has the smallest economy of the

five countries with US\$2.9 billion compared to US\$430.1 billion for South Africa. In terms of GDP growth rates, the SACU region had an average annual growth rate of 0.9% from 2014 to 2019, while Botswana had the highest annual growth rate of all the countries of 2.7%.

Secondly, merchandise exports are analysed. The entire region had a total merchandise export of US\$103.1 billion, with South Africa contributing 87% of the regional total, followed by Namibia. The region had a negative average annual growth rate regarding merchandise exports over the last five years of -1.1%. Botswana and South Africa also had negative growth rates from 2014 to 2019, while Lesotho had a growth rate of 4.1%. Thirdly, the region's service exports were US\$17.2 billion in 2019, with a negative annual growth rate of -2.4% from 2014 to 2019. South Africa's contribution to the region was 85% in 2019, and Botswana made the second-largest contribution. Namibia and South Africa both had negative growth rates over the last few years, while Botswana had the highest growth rate of 3.1%. Fourth, in terms of capital investment, a total of US\$72.1 billion was invested in 2019, with SA contributing 87% of the regional total, followed by Botswana. Growth in capital investment was negative at -2.4% over the last five years, while Namibia and SA also had negative growth rates. Botswana had a growth rate of 3.4% over the last five years. Lastly, the labour force was analysed for the SACU region. The total labour force was 26.7 million in 2019, with SA contributing 87%. The labour force has grown by an average of 2.2% annually over the last five years.

Table 2. Descriptive comparative summary

Country	Year	GDP (US\$ millions)	Merchandise exports (US\$ millions)	Service exports (US\$ millions)	GFCF (US\$ millions)	Labour force (x1000)
Botswana	2009	11 770	3 460	640	3 580	797
	2014	16 430(7.9)	8 510(29.2)	850(6.6)	4 950(7.7)	963(4.2)
	2019	18 640(2.7)	5 020(-8.2)	980(3.1)	5 780(3.4)	1081(2.5)
Lesotho	2009	2 250	730	41	479	883
	2014	2 740(4.4)	830(2.7)	29(-5.9)	734(10.6)	915(0.7)
	2019	2 942(1.5)	1 002(4.1)	31(1.4)	790(1.5)	974(1.3)
Namibia	2009	10 626	3 146	615	2 481	741
	2014	13 896(6.2)	4 612(9.3)	999(12.5)	4 375(15.3)	875(3.6)
	2019	14 383(0.7)	5 084(2.1)	650(-6.9)	1 997 (-10.9)	937(1.4)
South Africa	2009	364 276	61 677	13 201	63 661	19 109
	2014	413 605(2.7)	93 043(10.2)	16 829(5.5)	71 553(2.5)	20 829(1.8)
	2019	430 166(0.8)	90 016(-0.7)	14 727(-2.5)	62 905(-2.4)	23 300(2.4)
Eswatini	2009	4 276	1 660	211	551	321
	2014	5 013(3.4)	1 895(2.8)	883(63.7)	557(0.2)	431(6.9)
	2019	5 533(2.1)	2 044(1.6)	888(0.11)	637(2.9)	375(-2.6)
SACU Totals	2009	393 198	70 673	14 708	70 752	21 851
	2014	451 684 (2.9)	108 890 (10.8)	19 590 (6.6)	82 169 (3.2)	24 013 (1.9)
	2019	471 664 (0.9)	103 166 (-1.1)	17 276 (-2.4)	72 109 (-2.4)	26 667 (2.2)

Source: Own elaboration based on World Bank (2020) data. Average annual growth is listed in brackets.

Table 3 is a summary of the main ratios between GDP and merchandise and service exports. A rising ratio value means that the ratio between the two concepts has weakened. Let us firstly look at the ratio of merchandise exports to service exports. The ratio has weakened for the total SACU region, indicating that merchandise exports increased faster than service exports from 2009 to 2019. The ratio had weakened from 4.8 in 2009 to 6.0 in 2019. Lesotho has the highest ratio of 32.2, indicating

a low contribution to exports by the service sector. In contrast, Eswatini has the lowest ratio, indicating either a strong service exports sector or weak merchandise exports sector. Regarding the GDP to merchandise exports ratio, the total region ratio was 4.6 in 2019, with Eswatini having the lowest ratio and South Africa the highest ratio. Compared to the GDP to merchandise export ratios, the GDP to service export ratios are much higher, at 27.3 for the entire region.

Table 3. Summary of ratios

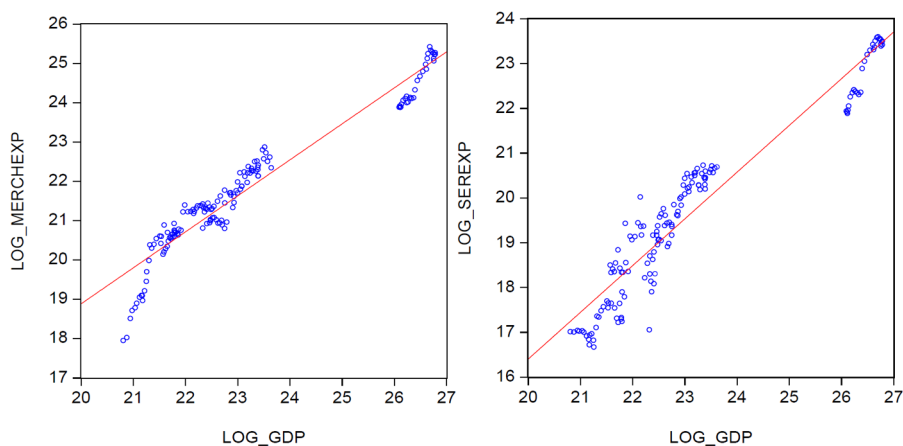
Country	year	Merchandise exports to service exports ratio	GDP to merchandise ratio	GDP to service exports
Botswana	2009	5.4	3.4	18.4
	2014	10.0	1.9	19.3
	2019	5.1	3.7	19.0
Lesotho	2009	17.8	3.1	54.9
	2014	28.6	3.3	94.5
	2019	32.3	2.9	94.9
Namibia	2009	5.1	3.4	17.3
	2014	4.6	3.0	13.9
	2019	7.8	2.8	22.1

South Africa	2009	4.7	5.9	27.6
	2014	5.5	4.4	24.6
	2019	6.1	4.8	29.2
Eswatini	2009	7.9	2.6	20.3
	2014	2.1	2.6	5.7
	2019	2.3	2.7	6.2
Total	2009	4.8	5.6	26.7
	2014	5.6	4.1	23.1
	2019	6.0	4.6	27.3

Source: Own elaboration based on World Bank (2020) data.

Figure 1 shows the correlations between GDP and merchandise exports, with a coefficient of 0.96, and between GDP and service exports, with a correlation of 0.95. These results indicate strong positive relationships between the main variables.

Figure 1. Correlation analysis: GDP versus merchandise and service exports



To determine the level of stationarity, unit root tests for the panel data for all the variables were conducted. These tests are necessary in order to make a decision on which long-run estimation model should be estimated. Table 4 reports the results from the unit root tests. The results signify that all variables are stationary at first dif-

ference. Based on this result, it was decided to proceed with the Fisher-Johansen panel cointegration test to assess the long-run relationships between the variables. It should be noted that the panel ARDL estimation technique could also be used, but in this analysis, the ADRL method will be used as the robustness test.

Table 4. Panel unit root tests

		Levin, Lin and Chu test	Im, Pesaran and Shin W-stat	ADF – Fisher Chi-square test	Result
LGDP	I(0)	0.0641	0.8836	0.9647	
	I(1)	0.0003*	0.0010*	0.0012*	I(1)
LMerchexp	I(0)	0.0895	0.6532	0.6883	
	I(1)	0.0001*	0.0035*	0.0017*	I(1)

LServexp	I(0)	0.0621	0.4232	0.5918	
	I(1)	0.0005*	0.0083*	0.0076**	I(1)
LGFCF	I(0)	0.1955	0.5539	0.5936	
	I(1)	0.0067*	0.0015*	0.0029*	I(1)
LLabf	I(0)	0.7878	0.9940	0.9935	
	I(1)	0.0095*	0.0016*	0.0007*	I(1)

Notes: Null hypothesis: Unit root. \* indicates 1% statistically significant, \*\* indicates 5% statistically significant.

Source: Own elaboration.

Fisher-Johansen panel cointegration tests were conducted for the three models included in the study using both the trace and the Max-Eigen tests, as indicated in Table 5. Regarding these tests and hypothesis testing, the null hypothesis could be rejected, as the results point to the existence of a long-run relationship between the variables. The results show that a long-run

cointegration relationship exists between the variables at a 5% significance level for all three models for both the trace test and the Max-Eigen test. It could, therefore, be stated that a long-run equilibrium relationship exists among the variables. Similar results were estimated by Begum and Shamsuddin (1998) in Bangladesh and Ee (2016) in Sub-Saharan Africa.

Table 5. Fisher-Johansen panel cointegration test

Hypothesised	Fisher stat.	Prob.	Fisher Stat.	Prob.
No. of CE(s)	(from trace test)		(from Max-Eigen test)	
<b>Model 1</b>				
None	44.70	0.0001*	34.62	0.0001*
1 at most	18.70	0.0442*	12.11	0.2780*
2 at most	274.2	0.0025*	28.37	0.0016*
3 at most	8.695	0.5613	8.695	0.5613
<b>Model 2</b>				
None	24.59	0.0062*	20.88	0.0219*
1 at most	10.48	0.3991	8.705	0.5603
2 at most	269.1	0.0002*	23.65	0.0086*
3 at most	13.91	0.1772	13.91	0.1772
<b>Model 3</b>				
None	28.65	0.0004*	24.39	0.0020*
1 at most	11.00	0.2014	10.25	0.2476
2 at most	4.927	0.7653	3.949	0.8617
3 at most	4.489	0.8105	4.199	0.8387

Note: \* indicates that the test statistics are significant at the 5% level. \* Probabilities are computed using asymptotic Chi-square distribution.

Source: Own elaboration.

The Fisher-Johansen cointegration tests confirmed long-run relationships between the variables, but the strength, type of relationships and coefficients still need to be determined. The long-run relationship was confirmed via two regression models: the fully modified ordinary least squares (FMOLS) and the dynamic ordinary least

squares (DOLS) models. A consideration of various forms of residual-based panel method results indicates that these models generally out-perform single-equation estimation techniques (Pedroni, 2000). The results of both methods need to be compared when deciding on the final results.

The FMOLS and DOLS models' results for all three equations/models are listed in Tables 6.1 to 6.3. Table 6.1 presents Model 1, which focuses on the impact of merchandise exports, and specifically on GDP. Other control variables include GFCF and Labf. The results indicate that all three dependent variables have a positive and significant impact on GDP in terms of both the FMOLS and DOLS methods. Taking into account the results for both methods, merchandise exports have the highest impact on GDP with coefficients of 0.98 and 1.16 for the FMOLS and DOLS methods, respectively. This could be related to a 1% increase in merchandise exports, leading to a 0.98% and 1.16% increase in GDP. Kalaitzi and Cleeve (2018) found similar results in the UAE. GFCF also has a positive impact on GDP with coefficients of between 0.20 and 0.66, while the labour force also has a positive impact.

Table 6.2 indicates the results for Model 2, which focuses on the impact of service exports, and specifically on GDP, with the same control variables as included in Model 1. The results indicate that all three dependent variables do have a positive and significant impact on GDP in terms of both the FMOLS and DOLS methods, except for the labour force for the FMOLS meth-

od and service exports (only at the 10% level of significance) for the DOLS method. Service exports positively impact GDP, with coefficients of 0.32 and 0.17 for the FMOLS and DOLS methods respectively. This could be related to a 1% increase in merchandise exports that could lead to between a 0.32% and 0.17% increase in GDP. Gabriele (2006) also found evidence of the impact of the sector of growth in developing countries. GFCF also has a positive impact on GDP with coefficients of between 0.68 and 0.56, while the labour force has a positive impact as well.

Table 6.3 indicates the results for Model 3, which includes both merchandise exports and service exports in the model and the impact on GDP. The results indicate that all dependent variables have a positive and significant impact on GDP in terms of both the FMOLS and DOLS methods, except for service exports for the DOLS method. Based on this analysis, merchandise exports have the highest impact of the four variables on GDP with coefficients of 0.96 and 1.16, respectively; the labour force and domestic investment follow. Service exports have the lowest impact with coefficients of between 0.24 and 0.11, but these impacts are not significant.

**Table 6.1. Model 1: FMOLS and DOLS results**  
Dependent variable: LGDP; Independent variables: LMerchexp; LGFCF; LLabf

FMOLS		DOLS				
Variables	Coefficient	t-statistic	P-value (prob)	Coefficient	t-statistic	P-value (prob)
LMerchexp	0.9783	8.5923	0.0002*	1.1575	8.6238	0.0001*
LGFCF	0.1985	2.1729	0.0482**	0.6623	4.3824	0.0007*
LLabf	0.4154	4.9928	0.0008*	0.8513	7.1131	0.0004*

Note: \*indicates that the test statistics are significant at the 5% level and \*\*indicates that the test statistics are significant at the 10% level.

Source: Own elaboration.

**Table 6.2. Model 2: FMOLS and DOLS results**  
**Dependent variable: LGDP; Independent variables: LServexp; LGFCF; LLabf**

FMOLS				DOLS		
Variables	Coefficient	t-statistic	P-value (prob)	Coefficient	t-statistic	P-value (prob)
LServexp	0.3186	2.8291	0.0054*	0.1723	1.5605	0.09156
LGFCF	0.6788	4.9763	0.0004*	0.5636	3.3507	0.0013*
LLabf	0.2371	1.4519	0.1490	0.6743	2.4583	0.0482**

Note: \*indicates that the test statistics are significant at the 5% level and \*\*indicates that the test statistics are significant at the 10% level.

Source: Own elaboration.

**Table 6.3. Model 3: FMOLS and DOLS results**  
**Dependent variable: LGDP; Independent variables: LMerchexp; LServexp; LGFCF; LLabf**

FMOLS				DOLS		
Variables	Coefficient	t-statistic	P-value (prob)	Coefficient	t-statistic	P-value (prob)
LMerchexp	0.9582	10.5456	0.0002*	1.1646	8.1398	0.0005*
LServexp	0.2357	3.9489	0.0004*	0.1067	0.0647	0.9490
LGFCF	0.4033	3.2236	0.0016*	0.6415	3.7055	0.0006*
LLabf	0.4406	6.6872	0.0006*	0.8148	6.1177	0.0004*

Note: \*indicates that the test statistics are significant at the 5% level and \*\*indicates that the test statistics are significant at the 10% level.

Source: Own elaboration.

Table 7 presents the pairwise Granger-causality test results for the shortrun, focusing on the causal relationships between the dependent variable and all of the independent variables. The important primary results are that a change in GDP could cause movements in exports of merchandise goods, while a bi-directional causal relationship exists between GDP and exports of services. These results were similar to results estimated by Kalaitzi and Cleeve (2018) in the UAE. Secondary re-

sults relating to investment (GFCF) indicate the importance of domestic investment for economic growth. Investment does cause changes in merchandise exports, service exports and changes in the labour force. Lastly, and interestingly, service exports do cause changes in merchandise exports. This causality was determined by Hoekman and Shepherd (2016) in a study in the EAC countries; Daniels (2000) found similar results for developing countries.

**Table 7. Pairwise Granger causality tests**

Null hypothesis	Obs	F-statistic	Prob.
LMerchexp does not Granger cause LGDP	145	1.2533	0.2648
LGDP does not Granger cause LMerchexp		6.1529	0.0143*
LServexp does not Granger cause LGDP	144	5.6156	0.0192*
LGDP does not Granger cause LServexp		10.2303	0.0017*
LGFCF does not Granger cause LGDP	128	2.1444	0.1456
LGDP does not Granger cause LGFCF		2.2953	0.1323
LLabf does not Granger cause LGDP	145	0.3931	0.5317
LGDP does not Granger cause LLabf		19.4453	2.E-05*
LServexp does not Granger cause LMerchexp	144	4.0637	0.0457*
LMerchexp does not Granger cause LServexp		0.3120	0.5773
LGFCF does not Granger cause LMerchexp	128	4.2977	0.0402*
LMerchexp does not Granger cause LGFCF		0.0017	0.9668



LLabf does not Granger cause LMerchexp	145	7.1251	0.0085*
LMerchexp does not Granger cause LLabf		0.0028	0.9579
LGFCF does not Granger cause LServexp	127	3.8852	0.0509**
LServexp does not Granger cause LGFCF		0.9988	0.3195
LLabf does not Granger cause LServexp	144	1.5207	0.2196
LServexp does not Granger cause LLabf		17.9973	4.E-05*
LLabf does not Granger cause LGFCF	128	2.2551	0.1357
LGFCF does not Granger cause LLabf		12.2911	0.0006*

Note: \* indicates 5% statistical significance; \*\* indicates 10% statistical significance.

Source: Own elaboration.

All three models passed the Jarque-Bera normality test, the serial correlation test and the residual heteroscedasticity test in terms of residual diagnostics. All p-values of tests were above the 0.05 or 5% significance level (Table 8).

Table 8. Residual diagnostic tests

Model	Jarque-Bera normality test (P-value)	Serial correlation test (p-value)	Residual heteroscedasticity test (p-value)
Model 1	0.5715	0.0873	0.1834
Model 2	0.1983	0.5212	0.0926
Model 3	0.3536	0.7323	0.1120

Source: Own elaboration.

Finally, an alternative econometric test was estimated as a robustness test as part of the analysis. The decision was made to use the ARDL method, as explained in the methodology section. Table 9 provides a summary of the results from the estimation. The long-run relationships were confirmed for all three models via the error correction

term (ECT), and all of the independent variables have significant long-run impacts on GDP. This result is similar to the principal analysis, and service exports had a lesser impact on GDP than the other variables. In terms of the short-run results, none of the variables had a significant impact.

Table 9. Panel ARDL PGM estimation results with LGDP as the dependent variable

Variables	Model 1	Model 2	Model 3
<b>Short-run equation</b>			
LMerchexp	0.1623		0.1469
LServexp		0.1204	0.0911
LGFCF	0.1802	0.2591	0.2167
LLabf	0.1808	0.6443	0.1523
ECT	-0.0558**	-0.38899**	-0.0381**
<b>Long-run equation</b>			
LMerchexp	0.4242*		0.9292*
LServexp		0.1823**	0.1271**
LGFCF	0.6218**	0.3629*	0.5591**
LLabf	1.0501*	1.0726*	1.0393*

Note: \*, \*\*, and \*\*\* indicate significance levels at 1%, 5% and 10%. Coefficient values are indicated.

Source: Own elaboration.

## Conclusions

On a global scale, international trade is still seen as one of the key drivers of the economy. Many countries have used export growth strategies to move through the stages of growth by using diversification or specialisation-focused strategies. This paper focuses on comparing the impact of merchandise exports versus service exports on economic growth in a developing region in Southern Africa. The results indicate that merchandise and service exports positively impact economic growth in the longrun in the region, with physical exports having the largest impact of the two types of exports. In terms of causality, the interesting results indicate that GDP causes changes in merchandise exports, while bidirectional causality exists between GDP and service exports. It was also found that changes in service exports cause changes in merchandise exports. This could be due to the fact that services are a supporting sector to the rest of the economy, including merchandise exports.

As with most time-series studies, the study has some limitations concerning the regression models' independent variables. Although investment and the labour force were included as control variables, other variables such as the exchange rate, FDI, and inflation could have been included. The methodology limits the number of variables to be included. Furthermore, the region in question, being a developing region, has limited complete datasets over long time periods. Future studies could include different variables and different regions of importance. In this case, the SACU region was selected due to limited previous studies on this topic in the region. One of the most interesting findings of this study is the lack of growth in the service sector and exports from this sector when compared to merchandise exports. This low-growth

situation in the region could be a pointer towards a gap in the export markets and even the local markets which may be filled by an extension and focus on the service sector. This sector is not well developed, and opportunities exist especially for small firms to fill this gap.

Based on the literature and empirical analysis, export diversification should form an essential component of the region's development strategies. Although the analysis indicates that merchandise exports are more important than service exports in terms of economic growth and employment, the service sector does bring about growth and increases in merchandise exports. Finally, the service exports component of international trade is underdeveloped, and has significant potential for expansion and contribution to accelerated growth.

## References

- Aditya, A., Acharyya, R. (2013), Export diversification, composition, and economic growth: Evidence from cross-country analysis, *The Journal of International Trade & Economic Development*, 22(7), 959-992. DOI: 10.1080/09638199.2011.619009.
- Agosin, M.R., Alvarez, R., Bravo-Ortega, C. (2012), Determinants of export diversification around the world: 1962–2000. *The World Economy*, 35(3), 295-315, DOI: 10.1111/j.1467-9701.2011.01395.x.
- Ajmi, A.N., Aye, G.C., Balcilar, M., Gupta, R. (2015), Causality between exports and economic growth in South Africa: Evidence from linear and non-linear tests, *The Journal of Developing Areas*, 49(2), 163-181. DOI:10.1353/jda.2015.0021
- Begum, S., Shamsuddin, A.F. (1998), Exports and economic growth in Bangladesh, *The Journal of Development Studies*, 35(1), 89-114, DOI: 10.1080/00220389808422556.
- Brenton, P., Newfarmer, R., Walkenhorst, P. (2009), Avenues for export diversi-

- fication: Issues for low-income countries, retrieved from: [https://mpra.ub.uni-muenchen.de/22758/2/Mpra\\_paper\\_22758.pdf](https://mpra.ub.uni-muenchen.de/22758/2/Mpra_paper_22758.pdf). (accessed 25 August 2020).
- Carrasco, C.A., Tovar-García, E.D. (2020), Trade and growth in developing countries: The role of export composition, import composition and export diversification, *Economic Change and Restructuring*, 1-23. DOI: 10.1007/s10644-020-09291-8.
- Chadee, D.D., Mattsson, J. (1998), Do service and merchandise exporters behave and perform differently? *European Journal of Marketing*, 32(9/10), 830-842. <https://doi.org/10.1108/03090569810232282>
- Cheong Tang, T., Wong, K.N. (2011), Foreign direct investment, merchandise and services trade in a transition economy: The case of Cambodia, *International Economic Journal*, 25(2), 251-267. DOI: 10.1080/10168737.2011.580581.
- Cho, D.S., Moon, H.C. (2000), From Adam Smith to Michael Porter: Evolution of competitiveness theory, Singapore: World Scientific Publishing.
- Contractor, F.J., Mudambi, S.M. (2008), The influence of human capital investment on the exports of services and goods: an analysis of the top 25 services outsourcing countries, *Management International Review*, 48(4), 433-445. DOI: 10.1007/s11575-008-0025-9.
- Cordina, G. (2004), Economic vulnerability and economic growth: Some results from a neo-classical growth modelling approach, *Journal of Economic Development*, 29(2), 21-39.
- Daniels, P.W. (2000), Export of services of servicing exports? *Geografiska Annaler: Series B, Human Geography*, 82(1), 1-15. DOI: 10.1111/j.0435-3684.2000.00069.x.
- Dash, R.K., Parida, P.C. (2012), Services trade and economic growth in India: An analysis in the post-reform period, *International Journal of Economics and Business Research*, 4(3), 326-345. DOI: 10.1504/IJEER.2012.046824.
- Ee, C.Y. (2016), Export-led growth hypothesis: Empirical evidence from selected Sub-Saharan African countries, *Procedia Economics and Finance*, 35, 232-240. DOI: 10.1016/S2212-5671(16)00029-0.
- Eichengreen, B., Gupta, P. (2013), The real exchange rate and export growth: Are services different? The World Bank, retrieved from: <https://elibrary.worldbank.org/doi/abs/10.1596/1813-9450-6629>. (accessed 24 August 2020).
- Fanhua, T.B.H. (2008), The impact of international trade structure on economic growth: A contrasting analysis between merchandise trade and service trade, *World Economy Study*, 9, retrieved from: [http://en.cnki.com.cn/Article\\_en/CJFD-Total-JING200809006.htm](http://en.cnki.com.cn/Article_en/CJFD-Total-JING200809006.htm). (accessed 20 August 2020).
- Forgha, N.G., Sama, M.C., Atangana, E.M. (2014), The effects of export diversification on economic growth in Cameroon, *International Invention Journal of Arts and Social Sciences*, 1(3), 54-69.
- Gabriele, A. (2006), Exports of services, exports of goods, and economic growth in developing countries, *Journal of Economic Integration*, 21(2), 294-317. DOI: 10.11130/jei.2006.21.2.294
- Gnangnon, S.K. (2020), Manufacturing exports and services export diversification, *The International Trade Journal*, 1-22. DOI: 10.1080/08853908.2020.1779877.
- Gouvea, R., Vora, G. (2015), Reassessing export diversification strategies: A cross-country comparison, *Modern Economy*, 6(1), 96-105. DOI: 10.4236/me.2015.61009.
- Hoekman, B., Shepherd, B. (2016), Services trade policies in the East African community and merchandise exports, *International Growth Centre*, 24(3), 02-04, retrieved from: <https://www.theigc.org/wp-content/uploads/2016/06/Hoekman-Shepherd-2016-Policy-brief.pdf>. (accessed 15 August 2020).
- Ibrahim, M.A. (2012), Merchandise export demand function for Egypt: A panel data analysis, *Applied Econometrics and International Development*, 12(1), 107-116.

- Kalaitzi, A.S., Chamberlain, T.W. (2020), Merchandise exports and economic growth: Multivariate time series analysis for the United Arab Emirates, *Journal of Applied Economics*, 23(1), 163-182. DOI: 10.1080/15140326.2020.1722384.
- Kalaitzi, A.S., Cleeve, E. (2018), Export-led growth in the UAE: Multivariate causality between primary exports, manufactured exports and economic growth, *Eurasian Business Review*, 8(3), 341-365. DOI: 10.1007/s40821-017-0089-1
- Kaliappan, S.R., Ahmad, S.A., Ismail, N.W. (2017), Service export and economic growth in the selected developing Asian countries, *International Journal of Economics & Management*, 11(2), 393-417.
- Kollie, G.B. (2020), Export-led growth hypothesis in ECOWAS: A panel data analysis, *African Journal of Economic Review*, 8(2), 23-34.
- Lectard, P., Rougier, E. (2018), Can developing countries gain from defying comparative advantage? Distance to comparative advantage, export diversification and sophistication, and the dynamics of specialisation, *World Development*, 102, 90-110. DOI: 10.1016/j.worlddev.2017.09.012.
- Lugeiyamu, E. (2016), Is export diversification a key force to Africa's economic growth?: cross-country evidence, retrieved from: <https://www.diva-portal.org/smash/get/diva2:937117/FULLTEXT01.pdf>. (accessed 12 August 2020).
- Malović, M., Zdravković, A. (2017), Export-led growth of a small open economy in the post-globalised world, *Review of Applied Socio-economic Research*, 30-44.
- McIntyre, A., Li, M.X., Wang, K., Yun, H. (2018), Economic benefits of export diversification in small states, *International Monetary Fund*, Working paper no 18/86.
- Meyer, D.F. (2020), The impact of globalisation on economic growth: The case of Visegrad countries, *Forum Scientiae Oeconomia*, 8(2), 25-36. [https://doi.org/10.23762/FSO\\_VOL8\\_NO2\\_2](https://doi.org/10.23762/FSO_VOL8_NO2_2)
- Mitra, D., Ranjan, P., Eichengreen, B., Gupta, P. (2013), Exports of services: Indian experience in perspective, *Indian Growth and Development Review*, 6(1), 35-59. DOI: 10.1108/17538251311329540.
- Munir, K., Javed, Z. (2018), Export composition and economic growth: Evidence from South Asian countries, *South Asian Journal of Business Studies*, 7(2), 225-240. DOI: 10.1108/sajbs-10-2017-0117.
- Naudé, W., Rossouw, R. (2011), Export diversification and economic performance: Evidence from Brazil, China, India and South Africa, *Economic Change and Restructuring*, 44(1-2), 99-134.
- Nyen Wong, K., Khoon Goh, S. (2013), Outward FDI, merchandise and services trade: Evidence from Singapore, *Journal of Business Economics and Management*, 14(2), 276-291. <https://doi.org/10.3846/16111699.2012.703964>
- Ogundipe, A., Amaghionyeodiwe, L. (2013), Transnational trade in ECOWAS: Does export content matter?, retrieved from: [https://mpra.ub.uni-muenchen.de/51617/1/MPRA\\_paper\\_51617.pdf](https://mpra.ub.uni-muenchen.de/51617/1/MPRA_paper_51617.pdf). (accessed 10 August 2020).
- Paldam, M. (2003), Economic freedom and the success of the Asian tigers: An essay on controversy, *European Journal of Political Economy*, 19(3), 453-477. [https://doi.org/10.1016/S0176-2680\(03\)00012-0](https://doi.org/10.1016/S0176-2680(03)00012-0)
- Pedroni, P. (2001), Fully modified OLS for heterogeneous cointegrated panels, in: B.H. Baltagi, T.B. Fomby, R. Carter Hill (Eds.), *Nonstationary Panels, Panel Cointegration, and Dynamic Panels (Advances in Econometrics, Vol. 15)* (pp. 93-130), Bingley: Emerald Group Publishing Limited. [https://doi.org/10.1016/S0731-9053\(00\)15004-2](https://doi.org/10.1016/S0731-9053(00)15004-2)
- Rakshit, M. (2007), Service-led growth, *Money and Finance*, 3, 91-125.
- SACU (2020), Background on SACU countries, retrieved from: <https://www.sacu.int/>. (accessed 26 August 2020).
- Sannasee, R.V., Seetanah, B., Lamport, M.J. (2014), Export diversification and economic growth: the case of Mauritius, *World Trade Organization*

- (WTO), retrieved from: [https://www.wto.org/english/tratop\\_e/devel\\_e/train\\_e/Mauritius.pdf](https://www.wto.org/english/tratop_e/devel_e/train_e/Mauritius.pdf). (accessed on 25 August 2020).
- Tekin, R.B. (2012), Economic growth, exports and foreign direct investment in least developed countries: A panel Granger causality analysis, *Economic Modelling*, 29(3), 868-878. <https://doi.org/10.1016/j.econmod.2011.10.013>
- UNCTAD (2001), Is the export-led growth hypothesis valid for developing countries? A case study of Costa Rica, Policy issues in international trade and commodities study series no. 7, retrieved from: [https://unctad.org/en/docs/itcd-tab8\\_en.pdf](https://unctad.org/en/docs/itcd-tab8_en.pdf). (accessed 2 August 2020).
- World Bank. (2020), World Development Indicators, retrieved from: <https://data.worldbank.org/> (accessed 10 July 2020).
- Yanikkaya, H. (2003), Trade openness and economic growth: A cross-country empirical investigation, *Journal of Development Economics*, 72(1), 57-89.
- Zeng, D.Z. (Ed.). (2010), Building engines for growth and competitiveness in China: Experience with special economic zones and industrial clusters, The World Bank, retrieved from: <https://elibrary.worldbank.org/doi/abs/10.1596/978-0-8213-8432-9>. (accessed 20 August 2020).

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